North Shore Restoration Project

Proposed Invasive Species Treatment

The Ranch Fire area was widely (although not completely) surveyed for invasive species in 2019, especially targeting areas near roads and suppression disturbance. Based on these and previous surveys, there are 253 mapped locations of 13 different non-native invasive species within the North Shore project area. These sites comprise a total of 435 acres; see Table 1.

Table 1. Summary of invasive plant species found in the North Shore project area.

Species	Common Name	# Sites	Acres	Priority
Bromus madritensis ssp. rubens	Red brome	17	169.1	3
Bromus tectorum	Cheatgrass	20	109.6	3
Carduus pycnocephalus	Italian thistle	13	8.9	2
Centaurea melitensis	Maltese starthistle	9	1.6	2
Centaurea solstitialis	yellow starthistle	32	6.4	2
Cirsium vulgare	bull thistle	32	23.4	2
Foeniculum vulgare	sweet fennel	1	0.1	1
Hypericum perforatum	Klamathweed	56	10.8	2
Melilotus officianalis	white sweet clover	1	0.2	1
Rubus armeniacus	Himalayan blackberry	8	5.3	3
Spartium junceum	Spanish broom	2	0.4	1
Taeniatherum caput-medusae	medusahead	14	3.9	2
Verbascum thapsus	common mullein	48	95.7	2
TOTAL		**253**	**435.4**	

Each species is assigned a priority rank for treatment. Priority rank 1 species are targeted for eradication in the project area, due to the presence of very few sites and very little total acreage. Priority 2 species are targeted for control, with eradication of small and/or remote sites. Priority 3 species are generally fairly widespread on the landscape, and are targeted for containment. In addition to the species-level priority ranks, certain sites, such as landings, parking, and staging areas, will also be assigned a higher priority for treatment.

This project is proposing the use of herbicides to control and/or eradicate invasive species in the project area. Herbicides would be used in addition to the manual methods such as hand-pulling that are already approved for use in the project area. The proposed herbicides are aminopyralid, triclopyr, imazapyr, and fluazifop. These chemicals would all be applied at or below the label rates, and mixed with a non-ionic methylated seed oil surfactant and a marker dye. All chemicals would be applied with a backpack sprayer, and no aerial application is proposed.

Standard Treatment Procedures

1. Herbicides will be applied by trained and/or certified applicators in accordance with label directions and applicable federal and state pesticide laws.

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2. Weather conditions (wind speed and direction, probability of precipitation, temperature, temperature inversions, atmospheric stability, and humidity) will be carefully monitored before and during herbicide applications to minimize drift, volatilization, and leaching or surface runoff of herbicides, based on label instructions.

3. Prior to the start of spray applications, spray equipment will be calibrated to ensure accuracy of delivered amounts of herbicide. Equipment will be regularly inspected during herbicide applications to ensure it is in proper working order.

4. Herbicide spray applications will not occur when wind speeds exceed label restrictions. Consider application-specific factors (e.g. pesticide and adjuvant properties; application equipment, height, pattern and technique; target vegetation density, size, and acreage; proximity to sensitive resources; temperature and humidity; and wind speed and direction) to ensure spray applications do not result in unacceptable drift.

5. Herbicide application will be carefully evaluated following precipitation and/or when runoff, soil saturation, standing water, or heavy dew is present or expected, to ensure the application will not result in herbicides entering surface or groundwater. Application will occur only under favorable weather conditions, generally defined as: 20% or less chance of rain (based upon NOAA forecasting) within 48 hours of application.

6. Mixing and loading herbicides will take place at least 150 feet from any surface water, and will only occur on level, disturbed sites.

7. A spill cleanup kit will be readily available whenever herbicides are transported or stored. Proper Personal Protective Equipment (PPE) will be worn or carried by the applicator(s) at all times when using herbicides.

8. To limit overspray and drift during herbicide applications, low pressure nozzles with coarse droplets will be used, and spray nozzles will be kept as close as possible to target plants.

9. Equipment, vehicles, clothing, and personal items will be inspected and cleaned as necessary to ensure they are free of soil, seeds, vegetative matter or other debris prior to entering new treatment areas or moving from one infestation to another.

10. If any special status plant species are discovered in a proposed herbicide treatment area, no herbicide will be applied within 25 feet of the plants. Target invasive plants within this buffer will be treated manually.

11. Buffers to water? Different chemicals?

12. Other specific design features?

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